

ber of years in building. It will be opened on Sept. 12, 1892, and will close on Dec. 31 of the same year, thus preceding the Chicago exhibition, which it is designed, in a measure, to supplement. All objects, if securely and properly packed, will be forwarded gratis to Madrid, and returned to the exhibitor free of expense, the exhibition not only bearing the cost of transportation, but also, when desired, attending to the arrangement and display of the objects without any charge. Those who desire special cases of their own may provide them, and special buildings may also be erected in the park if the design is approved by the general committee. All objects for the exhibition will be admitted duty free into Spain if they are withdrawn at the close of the exhibition, but two months will be allowed after the end of the exhibition before articles need be returned.

An international jury, proportionate to the number of the exhibitors from different countries and the importance of their exhibits, will examine the articles displayed and award the prizes. These will consist of a first prize of honor, a gold medal, a silver medal, a bronze medal, and honorable mention, each medal being accompanied with a diploma.

The exhibition covers, of course, the entire American continent, but to insure its complete success the active co-operation and assistance of citizens of the United States is especially desired. There is every reason why Americans should both be interested in this exhibition and take part in it. The conditions are liberal, the prizes ample, and the time is especially convenient to intending exhibitors at the Chicago exhibition, as objects may be exhibited both at Madrid and at Chicago. Nor is the novelty of the exhibition its least merit. Early American history has always been a favorite topic of study among European scholars, but it is safe to say that if this exhibition is carried out as it is planned, it will offer Europeans the first opportunity they have had to study primitive American life in its completeness. American collections are very rich in the materials most desired at Madrid, and it is most sincerely to be hoped that the gracious invitation of the Spanish people to participate in their Columbian celebration will meet with a generous and hearty support from American scholars and collectors.

BARR FERREE.

New York.

At What Time were the Galapagos Islands Discovered?

I SHOULD be greatly obliged to anyone who could give me some information in regard to the discovery of the Galapagos Islands. The first notice I have been able to find is in the Atlas of Abraham Ortelius, published in 1570, where the Islands are spelled "Galapagos" and "Galepegos" (Ortelius, Abraham, "Typus Orbis Terrarum," 1570; second edition, 1580; "Theatrum oder Schaubuch des Erdkreys, Autdorff, Americae sive novi orbis novae descriptio," 1570). On the splendid map of Diego Ribero, prepared between 1527 and 1529, the Galapagos Islands are not represented (Ribero, Diego, J. G. Kohl, "Die beiden aeltesten General Karten von America ausgeführt in den Jahren, 1527 und 1529, auf Befehl Kaiser Carl's, v.," Weimar, 1860). It seems therefore probable that these islands were discovered in the beginning of the sixteenth century, before 1570. The word *galapago* itself seems to be of South American origin; it means land-tortoise

G. BAUR.

Clark University, Worcester, Mass., Jan. 10.

BOOK-REVIEWS.

School and College; devoted to secondary and higher education. Edited by Ray Greene Huling. Vol. I., No. 1, January, 1892. Boston, Ginn & Co.

MAGAZINES and newspapers devoted to educational subjects multiply apace, so that if our teachers are not properly informed on matters relating to their work, it will not be for want of the means of intercommunication. This latest comer in the field is a magazine of sixty-four pages, to be issued every month except July and August, at twenty cents a number, or \$1.50 a year. The articles in this opening number show very plainly the influence of the educational ideas just now prevalent; indeed, they may be said to show little else. The writers appear to agree that the study of Greek is destined to be abandoned; though the editor speaks of this as an

event that is inevitable rather than as one to be desired. The most interesting paper in the magazine is that by President Andrews of Brown University on "Some of the Next Steps Forward in Education," its most important point being the suggestion that teachers ought to enter into closer moral and social relations with their pupils. Mr. B. C. Burt has an article advocating the beginning of philosophical study at an earlier age than is now customary; but unless the subject can be made more easily intelligible than it is in his article, we fear that his wishes will not be realized. Mr. John Tetlow gives an account of "The Greek Method of Performing Arithmetical Operations," which will be of interest to mathematical students; and Mr. James H. Blodgett has a brief paper on "Secondary Education in Census Years." The rest of the magazine is occupied with educational news, both domestic and foreign, a few book reviews of no great value, and several brief "Letters to the Editor." The new magazine has some good points, and its field, though narrow, may be made interesting by proper cultivation; but it seems to us that an improvement in the quality of our educational literature is more important than an increase in its quantity.

Geological Survey of Alabama. EUGENE ALLEN SMITH, Ph.D., State Geologist. Report on the Coal Measures of the Plateau Region of Alabama, by Henry McCalley, Assistant State Geologist, including a report on the Coal Measures of Blount County, by A. M. Gibson, with a Map of the Coal-Fields and two Colored Geological Sections across the Plateau Region and Intermediate Valleys. Montgomery, Ala., 1891.

IN the Report of Progress of the Alabama Geological Survey, for the years 1877-8, the division of the Warrior Coal-Field into "Plateau Region" and "Warrior Basin" was first made by Dr. Smith, the State geologist. Characteristic of the Plateau Region is the circumstance that the limestone beds which underlie the capping of Coal Measures are above the general drainage level of the country. This arrangement of the two classes of strata determines in great measure the character of the scenery, for the removal by erosion of the more perishable limestone causes the undermining of the harder strata above, which from time to time break off with nearly vertical faces, forming cliffs which overlook all the valleys. The three principal valleys that traverse this region, in a north-east and south-west direction, are anticlinal valleys, more or less complicated by faulting and overlapping; they are Wills's, Murphree's, and Brown's Valleys, the latter being an extension into this State of the great Sequatchee Valley of Tennessee. Between these anticlinals the Coal Measures occupy shallow synclinal troughs, which also show secondary undulations, with axes nearly at a right angle to the axes of the synclinals and anticlinals, i.e., approximately north-west and south-east. In the anticlinal valleys strata down to the Cambrian are exposed, but in the smaller valleys, cut by streams in the synclinal troughs, only the subcarboniferous measures are reached by the erosion.

Towards the south-west the Coal Measures and their underlying strata slope gradually and more rapidly than the topography, and the Plateau Region thus grades insensibly into the Basin, where none of the beds underlying the coal are above drainage. In the Plateau Region, and particularly in its north-eastern portion, only the lowest of the rocks of the Coal Measures are left capping the mountains, viz., the two conglomerates with their intervening and underlying beds; but further towards the south-west, other higher members of the Coal Measures come in and the plateau like character is in equal measure lost.

The Report for 1877-8, above referred to, and a subsequent Report for 1879-80, contained notes chiefly on the Coal Measures of the Warrior Basin. In 1886 a large volume from the pen of Mr. McCalley, "On the Warrior Field," was published by the survey. This report also was concerned chiefly with the Measures of the Warrior Basin, though containing some notes on part of the Plateau Region. The present volume deals with the Measures of the Plateau Region alone, and presents about all the information at this time available. The two colored sections exhibit well the geological and topographic features of this region, and show the gradual sinking of the strata towards the south-west and the passage into the Basin proper.

The two conglomerates named above are identical with the Upper and Lower Conglomerates of Professor Safford of Tennessee. They are usually some twenty-five to thirty feet apart, though sometimes separated by a hundred and fifty feet of other strata, and sometimes in direct contact with each other. The lower conglomerate is usually the harder of the two, and is often called the "Mill-stone Grit." In the north-eastern part of the region the most important coal-bearing beds are below this lower conglomerate, and have an average thickness of fifty feet, but there are places where the sub-conglomerate measures have a thickness of seven hundred feet or more, as in parts of Blount County.

The principal seam of coal in the sub conglomerate measures is the Cliff Seam, immediately under the lower conglomerate or cliff rock. Its thickness, like that of all these lower coal seams, is extremely variable, ranging from a few inches to five or six feet. Fifteen or twenty feet below the Cliff Seam is the Dade or Eureka Seam, likewise very variable in thickness, passing, within limited areas, from a few inches to twelve or fourteen feet. This great variability in the thickness seems generally to be due to undulations in the strata forming the floor of the beds, though in some cases to variations in the roof or cover. While there are two or three other seams below these, the two just named have furnished most of the coal mined in the plateau region, and of this the Cliff Seam has yielded the greater part. Between the two conglomerates there is another good workable seam, the Sewanee Seam, from two to three feet in thickness.

While the upper conglomerate forms generally the surface rock over the Plateau Region, there are in many places, and especially as we go south westward, overlying strata with their coal seams, none of which, however, have been worked in this section, but which become more and more important in the direction of the Basin above mentioned, and yielding all the coal there mined. In that direction also the sub-conglomerate coals lose their importance, being mined nowhere in Alabama except in the north-eastern portion of the Plateau Region in Madison, Jackson, and DeKalb Counties.

In these lower Coal Measures there are, very generally, beds of clay iron-stone (carbonate), and of black band, which may some day come into use.

Homilies of Science. By DR. PAUL CARUS. Chicago, Open Court Pub. Co. 12°. \$1.50.

THIS book consists of articles on various topics in science, religion, and morals, contributed at intervals to the *Open Court* newspaper, of which Dr. Carus is editor. He tells us in his preface that in early life he intended to be a preacher in the Christian church; his inclination toward the religious life being partly due to his native disposition, and partly, no doubt, to the example of his father, who was a doctor of theology and an officer in the church of eastern and western Prussia. But his studies led him, as they have led many others in our time, to doubt the truth of many of the Christian doctrines, and ultimately to complete religious and philosophical scepticism. He therefore abandoned his intention of entering the church, and after a time became a preacher of the new doctrines that he had adopted, the most conspicuous of which is a blank materialism — a materialism which is not in the least disguised by calling it "monism." But while abandoning all distinctly religious views, Dr. Carus has held fast to the supremacy of the moral law and the need of moral improvement in personal and social life, and the earnestness with which he preaches these truths constitutes the main interest of this book. His remarks on God and immortality will be far indeed from pleasing religious minds; but what he says on ethical subjects, though containing nothing particularly new, will find an echo in the hearts of good men of every creed. He is wholly uninfected with the socialistic heresies now so widely prevalent, and he sternly rebukes those free-thinkers who regard morality with indifference, and scoff at its requirements.

In all that he says about the need of moral improvement and the dignity of man's moral nature, it is needless to say that we cordially agree with him; but we are by no means prepared to follow him in his rejection of all religious belief. We do not believe that the world will abandon theism, though it will undoubtedly

abandon many of the traditional dogmas of Christianity, if it has not already abandoned them. Nor can we agree with Dr. Carus in thinking that the views set forth in his book are the last word of science and philosophy on religious themes. On the contrary, we regard the present as emphatically an age of transition in religion and philosophy; and we believe that the religion of the future will be quite different from the doctrine of Dr. Carus, widely prevalent as his views undoubtedly are at the present time. But as an example of existing tendencies, as well as by its moral earnestness, this book will interest the reader.

AMONG THE PUBLISHERS.

IN *St. Nicholas* for January Eliza Ruhamah Seidmore, favorably known as a writer on Japanese subjects, tells of "Two Queer Cousins of the Crab" — the giant crab and the little mask-crab that carries the impress of a human face upon its shell.

— John Wiley & Sons have in preparation a work by Simpson Bolland, entitled "The Iron Founder."

—"It would be a wise and timely move," says *Outing* for January, "to prohibit the sale of grouse of all kinds and quail for, say, a period of at least three years. This would give a fair idea of just how much the market-shooters are responsible for the decrease of our game, and should so lessen the annual slaughter as to give the birds every chance to increase."

— Charles Scribner's Sons have now ready "The Real Japan," studies of contemporary Japanese manners, morals, administration, and politics, by Henry Norman, with seventy illustrations from photographs taken by the author; also "The Development of Navies During the Last Half Century," by Captain Eardley-Wilmot, which forms a volume in the Events of Our Own Time Series.

— Macmillan & Co. will publish in the course of January Mr. Henry Jephson's account of the "Rise and Progress of the Political Platform." The work is in two volumes, of which the first deals with the long struggle for the rights of public meeting and of free speech during the reigns of George III. and George IV. The second volume follows the progress of the platform from the agitation for the first reform bill to that which preceded the reform act of 1884. Mr. Jephson finally treats of the position and power of the platform in the present day.

— A unique experiment will be tried in the February issue of *The Ladies' Home Journal*. The entire number has been contributed in prose, fiction, and verse by the daughters of famous parentage, as a proof that genius is often hereditary. The work of thirty of these "daughters" will be represented. These will comprise the daughters of Thackeray, Hawthorne, Dickens, James Fenimore Cooper, Horace Greeley, Mr. Gladstone, President Harrison, William Dean Howells, Senator Ingalls, Dean Bradley of Westminster, Julia Ward Howe, General Sherman, Jefferson Davis, and nearly a score of others. Each article, poem, or story printed in this number has been especially written for it, and the whole promises to be a successful result of an idea never before attempted in a magazine.

— The *Quarterly Journal of Economics* for January contains an important article by Hon. Carroll D. Wright on the "Evolution of Wages Statistics," showing the gradual process by which the statistics of labor have been perfected in the last twenty years, the United States leading the way. S. M. Macvane writes on "Capital and Interest," and H. Bilgram of Philadelphia on "Böhm-Bawerk's Positive Theory of Capital." J. A. Hill makes a careful study of the recent "Prussian Income Tax," and W. B. Shaw presents his annual review of "Social and Economic Legislation by the States in 1891." Various notes and memoranda and the usual careful bibliography for the preceding quarter make up a number having great variety of contents and of interest.

— *The Chautauquan* for February presents the following table of contents: The Battle of Monmouth, by John G. Nicolay; Domestic and Social Life of the Colonists, V., by Edward Everett Hale; Trading Companies, II., by John H. Finley; States made from Territories, II., by Professor James Albert Woodburn; Sunday Readings, selected by Bishop Vincent; Physical Culture, I.,